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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR  | ATTORNEY DOCKET NO.     | CONFIRMATION NO. |
|-----------------|-------------|-----------------------|-------------------------|------------------|
| 10/620,512      | 07/16/2003  | Raymond W. Blasingame | H0004037 (1139.1128101) | 8497             |

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| EXAMINER |
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SANGHAVI, HEMANG

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| ART UNIT | PAPER NUMBER |
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2874

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| MAIL DATE | DELIVERY MODE |
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11/01/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                               |                                   |  |
|------------------------------|-------------------------------|-----------------------------------|--|
| <b>Office Action Summary</b> | Application No.<br>10/620,512 | Applicant(s)<br>BLASINGAME ET AL. |  |
|                              | Examiner<br>Hemang Sanghavi   | Art Unit<br>2874                  |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 August 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,6-9 and 35-57 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6-9 and 35-57 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Amendment/Arguments*

The amendment filed on August 21, 2007 has been entered. Applicant's arguments with respect to claims 1, 2, 4, and 6-9 have been considered but are moot in view of the new ground(s) of rejection.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 42 and 49 are rejected under 35 U.S.C. 102(e) as being anticipated by Takada (US 2003/0147602).

Takada discloses an optical link device comprising:

a sleeve (9) configured to receive an optical fiber (24); a fiber stop (12) comprising a first side proximate the sleeve and a second side opposite the first side, at least a portion of the second side being aspheric; and a lens (13) supported by the fiber stop such that there is a gap between the lens and the second side of the fiber stop. It is inherent that the lens has an index of refraction that is approximately the same as an index of refraction of the fiber stop, since they are made from the same material.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 3-4, 7-9, 35-41, and 50-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Edwards et al (US 6,893,170) and Takada (US 2003/0147602).

Edwards et al discloses an optical module comprising: an optical fiber receiving structure (20); and a fiber stop (35) attached to the optical fiber receiving structure; and a lens (39) situated along an optical axis defined by the optical fiber receiving structure and the fiber stop such that there is a gap between the lens and the fiber stop.

Edwards et al fails to explicitly state that the fiber stop has an index of refraction approximately the same as the index of refraction of the lens (claim 1) and the fiber stop and a core of the optical fiber have the same refractive index (claim 36 and claim 50).

Takada, as discussed above, teaches that it is critical not to have different refractive index between the fiber and the stopper. The differences in the refractive indices affect the optoelectronic element in the optical link due to the mismatch in the refractive indices creating the reflection. See paragraph [0032] and [0039]. Also, it is extremely well known in the art to utilize matched refractive index components in the optical coupling system to avoid/reduce the reflection between the interfaces of the components.

Thus, from collective teachings of Takada and available well known techniques, the ordinary artisan would have found it to be obvious at the time of the invention to provide the same refractive index for the core of the optical fiber, the stopper, and the lens in the Edwards et al for the purpose of advantageously reducing the reflection at the interfaces, hence increasing life of the module.

Edwards et al fails to state the material of the fiber stop, i.e. glass, plastic, LASFN-9, or BK7. However, it is well known in the art to make the optical component from plastic or glass. The LASFN-9 and BK7 are commercially available transparent substrate.

Lacking criticality in the specification as to the material for the spacer, the ordinary artisan would have found it obvious at the time of invention to make the spacer from the plastic or glass in the optical module of Edwards et al as obvious matter of design choice providing a desired coupling between the laser and the optical fiber.

Edwards et al fails to state the lens is a spherical, aspherical, or ball lens.

However, it is extremely well known in the art to use a ball, spherical or aspherical lens in optical coupling system providing desired coupling. Edwards et al also teaches that the lens may be formed of different materials and shapes (see lines 5-30 of column 4).

Lacking criticality in the specification as to a spherical or aspherical and from teaching of Edwards et al, the ordinary artisan would have found it obvious at the time of invention to use a ball, spherical or aspherical lens in the optical coupling system of Edwards et al as obvious matter of design choice providing a desired coupling between the laser and the optical fiber.

Claims 43-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takada (US 2003/0147602).

Takada fails to explicitly state that the fiber stop has an index of refraction approximately the same as a core of the optical fiber has the same refractive index.

Takada, as discussed above, teaches that it is critical not to have different refractive index between the fiber and the stopper. The differences in the refractive indices affect the optoelectronic element in the optical link due to the mismatch in the refractive indices creating the reflection. See paragraph [0032] and [0039]. Also, it is extremely well known in the art to utilize matched refractive index components in the optical coupling system to avoid/reduce the reflection between the interfaces of the components.

Thus, from collective teachings of Takada and available well known techniques, the ordinary artisan would have found it to be obvious at the time of the invention to

provide the same refractive index for the core of the optical fiber, the stopper, and the lens in the Takada for the purpose of advantageously reducing the reflection at the interfaces, hence increasing life of the module.

Takada fails to state the material of the fiber stop, i.e. glass, plastic, LASFN-9, or BK7. However, it is well known in the art to make the optical component from plastic or glass. The LASFN-9 and BK7 are commercially available transparent substrate.

Lacking criticality in the specification as to the material for the spacer, the ordinary artisan would have found it obvious at the time of invention to make the spacer from the plastic or glass in the optical module of Takada as obvious matter of design choice providing a desired coupling between the laser and the optical fiber.

Edwards et al fails to state the lens is a ball lens.

However, it is extremely well know in the art to use a ball, spherical or aspherical lens in optical coupling system providing desired coupling.

Lacking criticality in the specification as to a spherical or aspherical, the ordinary artisan would have found it obvious at the time of invention to use a ball lens in the optical coupling system of Takada as obvious matter of design choice providing a desired coupling between the laser and the optical fiber.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lee et al and Modavis et al disclose different types of assemblies including a fiber stopper and a lens.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hemang Sanghavi whose telephone number is (571) 272-9955. The examiner can normally be reached on Mon-Fri.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



/Hemang Sanghavi/  
Primary Examiner  
Art Unit 2874

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